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### **Kohei Kawamura on designing and interpreting customer reviews**

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**Focus paper****School of  
Economics**[www.econ.ed.ac.uk](http://www.econ.ed.ac.uk)***Designing and interpreting  
customer reviews***

*Can we take online  
customer reviews  
or responses in  
social surveys at  
face value? If not,  
how should we  
“decode” them? How  
can questionnaires  
be designed to  
encourage effective  
communication when  
many people send  
information at the  
same time?*

Two recent research papers by Kohei Kawamura (Kawamura 2011, 2013) look at these questions from a game theoretic perspective. In particular, he studied how the presence of multiple senders of information affects the reliability of communication. The framework he has developed is applicable to many situations of interest, such as online customer reviews (Amazon, TripAdvisor, etc.) and large social surveys (e.g. opinion surveys on Scottish independence).

According to Kawamura, the most important feature of communication involving many senders of information is that they have to compete for attention of the audience and as a result they tend to be tempted to “exaggerate” their views. For example, for an online review a reviewer who likes a product only a little may nonetheless say “it is a fantastic product” and give five stars, while if he is slightly

dissatisfied with the product, he may exaggerate in the opposite direction and say “total waste of money” and give one star. Indeed, it is well known that online customer reviews under a five star rating system have disproportionately large numbers of one and five stars. This is because when many individuals express their views at the same time (or on the same website), each one of them has only a tiny influence on the decision of the audience.

Of course that is not the end of the story. Knowing that the senders of information have such incentive to exaggerate, the audience will take it into account and “discount” their messages. But in response, the senders of information have even more incentive to exaggerate. Kawamura rigorously analysed this “strategic” interaction and derived a Nash equilibrium of the communication game.

This Focus Paper is based on two papers by Kohei Kawamura:

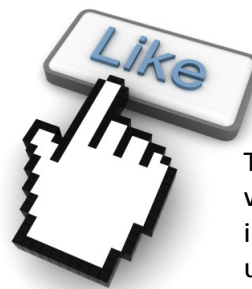
① “Eliciting Information from a Large Population”, *Journal of Public Economics*, 103, 44-54, 2013.

② “A Model of Public Consultation: Why is Binary Communication So Common?”, *Economic Journal*, 121(553), 819-842, 2011.



He found theoretically that in such communication, extreme messages (such as five star and one star reviews) are discounted more heavily, while “moderate” messages are regarded as trustworthy. As the number of senders increases, the incentive to exaggerate becomes stronger, and more people send extreme messages and consequently they have to be more heavily discounted.

When the incentive to exaggerate becomes very strong, it maybe that the only way to communicate credibly is to use binary messages such as “Yes or No”, “Like or Dislike”, and “Agree and Disagree”. A salient feature of binary messages is that while they are coarse and able to carry less information than more elaborate messages, they do not give any opportunity for the senders to exaggerate (e.g. “how much” disagree or disagree). This is an important yet underappreciated advantage of simple binary questions.



### ***Kawamura's study provides two practical suggestions***

First, when we read online reviews or results from a social survey, we should consider how strong the respondents' incentive to exaggerate would be. This would primarily depend on how many reviewers/respondents there are. When there are less of them, their messages/answers require less “discounting” even if they are extreme, since each of them has more influence on the audience and thus there is less incentive for the senders to exaggerate. Whereas, when the number of reviewers/respondents is large, it can make sense to discard information about the intensity of their opinions and focus instead on simply extrapolating how many agreed or disagreed, or liked or disliked.

***“The most important feature of communication involving many senders of information is that they have to compete for attention of the audience and as a result they tend to be tempted to exaggerate their views.”***

The second suggestion is that, when we ask questions to multiple individuals, we may wish to use binary questions when the potential number of respondents is large. Not only is it simple to ask, answer and compile, binary questions and answers have the advantage that they do not require any adjustment for exaggeration.



An interesting example of this is YouTube. Until a few years ago, YouTube had a five star rating system for each video clip, just as Amazon and TripAdvisor currently do. But now YouTube only offers two choices for rating, namely Like or Dislike. According to Kawamura this rating system is “robust” to any incentive to exaggerate, regardless of the number of reviewers.